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Dr. Raymond W. Waldo
Station Manager
San Onofre

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U.S. Nuclear Regulatory Commission
Document Control Desk
Washington, D.C. 20555-0001

Subject: **Docket Nos. 50-361 and 50-362**
Licensee Event Report No. 2002-003
San Onofre Nuclear Generating Station, Units 2 and 3

Gentlemen:

This submittal provides a Licensee Event Report (LER) for an occurrence involving the actuation of the Reactor Protection System and Main Steam Isolation System at Unit 2. While this occurrence is applicable to both Units 2 and 3, a single report for Unit 2 is being submitted in accordance with Section 5.2.7(8) of NUREG 1022, Revision 2.

Any actions listed are intended to ensure continued compliance with existing commitments as discussed in applicable licensing documents; this LER contains no new commitments. If you require any additional information, please so advise.

Sincerely,

Raymond Waldo

LER No. 2002-003

cc: E. W. Merschoff, Regional Administrator, NRC Region IV
C. C. Osterholtz, NRC Senior Resident Inspector, San Onofre Units 2 & 3

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IE22

NRC FORM 366 (MM-YYYY)	U.S. NUCLEAR REGULATORY COMMISSION	APPROVED BY OMB NO. 3150-0104 EXPIRES MM-YYYY
LICENSEE EVENT REPORT (LER) (See reverse for required number of digits/characters for each block)		Estimated burden per response to comply with this mandatory information collection request 50 hrs Reported lessons learned are incorporated into the licensing process and fed back to industry Forward comments regarding burden estimate to the Information and Records Management Branch (T-6 F33), U.S Nuclear Regulatory Commission, Washington, DC 20555-0001, and to the Paperwork Reduction Project (3150-0104), Office of Management and Budget, Washington, DC 20503 If a document used to impose an information collection does not display a currently valid OMB control number, the NRC may not conduct or sponsor, and a person is not required to respond to, the information collection

FACILITY NAME (1)	DOCKET NUMBER (2)	PAGE (3)
San Onofre Nuclear Generation Station (SONGS) Unit 2	05000-361	1 of 3

TITLE (4)

Inadequate Procedure Results in Incorrect Adjustment of the Steam Bypass Control System Causing a Reactor Trip.

EVENT DATE (5)			LER NUMBER (6)			REPORT DATE (7)			OTHER FACILITIES INVOLVED (8)	
MONTH	DAY	YEAR	YEAR	SEQUENTIAL NUMBER	REVISION NUMBER	MONTH	DAY	YEAR	FACILITY NAME	DOCKET NUMBER
									SONGS Unit 3	05000-362
06	30	2002	2002	003	00	08	28	2002	FACILITY NAME	DOCKET NUMBER

OPERATING MODE (9)	1
POWER LEVEL (10)	018

THIS REPORT IS SUBMITTED PURSUANT TO THE REQUIREMENTS OF 10 CFR §: (Check all that apply) (11)

20 2201(b)	20 2203(a)(3)(i)	50 73(a)(2)(i)(C)	50 73(a)(2)(vii)
20 2201(d)	20 2203(a)(3)(ii)	50 73(a)(2)(ii)(A)	50 73(a)(2)(viii)(A)
20 2203(a)(1)	20 2203(a)(4)	50.73(a)(2)(ii)(B)	50 73(a)(2)(viii)(B)
20.2203(a)(2)(i)	50 36(c)(1)(i)(A)	50 73(a)(2)(iii)	50 73(a)(2)(ix)(A)
20.2203(a)(2)(ii)	50 36(c)(1)(ii)(A)	X 50 73(a)(2)(iv)(A)	50 73(a)(2)(x)
20.2203(a)(2)(iii)	50.36(c)(2)	50 73(a)(2)(v)(A)	73 71(a)(4)
20 2203(a)(2)(iv)	50.46(a)(3)(ii)	50 73(a)(2)(v)(B)	73 71(a)(5)
20 2203(a)(2)(v)	50 73(a)(2)(i)(A)	50 73(a)(2)(v)(C)	OTHER
20 2203(a)(2)(vi)	50 73(a)(2)(i)(B)	50 73(a)(2)(v)(D)	

LICENSEE CONTACT FOR THIS LER (12)

NAME	TELEPHONE NUMBER (Include Area Code)
R. W. Waldo, Station Manager, Nuclear Generation	949-368-8725

COMPLETE ONE LINE FOR EACH COMPONENT FAILURE DESCRIBED IN THIS REPORT (13)

CAUSE	SYSTEM	COMPONENT	MANUFACTURER	REPORTABLE TO EPIX		CAUSE	SYSTEM	COMPONENT	MANUFACTURER	REPORTABLE TO EPIX

SUPPLEMENTAL REPORT EXPECTED (14)			EXPECTED SUBMISSION DATE (15)	MONTH	DAY	YEAR
YES (If yes, complete EXPECTED SUBMISSION DATE).	X	NO				

ABSTRACT (Limit to 1400 spaces, i e , approximately 15 single-spaced typewritten lines) (16)

On June 30, 2002, plant operators were performing startup testing at the end of the Unit 2 Cycle 12 Refueling Outage. At that time, the reactor was at about 18 percent thermal power. In response to a small steam imbalance, the Steam Bypass Control System (SBCS) "quick opened" all four SBCS valves. This caused steam pressure to decrease to the low steam generator pressure trip setpoint, which in turn caused reactor protection system (RPS) and main steam isolation system (MSIS) actuations.

The Unit 2 RPS and MSIS actuations occurred because the SBCS Dynamic Response Module (DRM) had been improperly adjusted during the Unit 2 Cycle 12 refueling outage. This adjustment error was caused by an inadequate procedure.

On July 5, 2002, the Unit 2 SBCS DRM was adjusted to its correct values; On August 10, 2002, the Unit 3 SBCS DRM was adjusted to its correct values.

SCE concludes that this event was of very low to no safety significance. The SBCS is not credited in the accident analysis and safety systems functioned correctly.

Plant:	San Onofre Nuclear Generating Station, Units 2 and 3	
Event Date:	June 30, 2002	
	Unit 2	Unit 3
Reactor Vendor	Combustion Engineering	Combustion Engineering
Power	18 percent	100 percent

Background:

San Onofre Units 2 and 3 each has a steam bypass control system (SBCS) [EIIS System Code JI]. The SBCS limits the potential increase in steam generator (SG) [SG] pressure that could occur following plant transients such as a turbine trip. The SBCS controls SG pressure by venting steam from the SGs to the main condenser [COND].

The SBCS consists of four steam bypass control valves [V], associated piping, and the sensors and control circuitry to operate them. During a small steam imbalance, the SBCS will modulate the valves open in groups of two relatively slowly. For larger imbalances, the SBCS will generate "Quick Open" signals at two different thresholds levels. At the first threshold, the SBCS will send a quick open signal to valve pair 1 (2HV8424 and 8426), which will open the valves with a quick open function and remain open for a preset time. At the second threshold, the SBCS will quick open valve pair 2 (2HV8423 and 8425) and maintain them open for a preset time. After SBCS valves quick open sequence is completed, the SBCS can modulate the valves to maintain the SGs at setpoint pressure.

Description of the Event:

On June 30, 2002, plant operators (utility, licensed) were performing startup testing at the end of the Unit 2 Cycle 12 Refueling Outage. At that time, the reactor was at about 18 percent thermal power, and the SBCS was in automatic with valve pair 2 modulating steam flow.

At 18:55 PDT a small change in steam flow caused the SBCS to generate a quick open to valve pair 1. Steam flow then increased and valve pair 2 began modulating closed. When the quick open signal to valve pair 1 cleared, valve pair 1 closed rapidly (as designed). The resulting rapid decrease in steam flow caused the SBCS to generate a second quick open signal that was large enough for all four SBCS valves to quick open. This caused steam pressure to decrease to the low SG pressure trip setpoint, which in turn caused reactor protection system (RPS) and main steam isolation system (MISIS) actuations.

On June 30, 2002, at 2133 PDT, Southern California Edison (SCE) made a 4-hour telephone notification to the NRC Operations Center (Log No. 39032) in accordance with 10CFR50.72(b)(2)(iv)(B) for actuation of the RPS and MSIS {Engineered Safety Features (ESF)} actuation. SCE is providing this 60-day follow-up report in accordance with 50.73(a)(2)(iv)(A).

Cause of the Event:

The Unit 2 RPS and MSIS actuations occurred because the SBCS Dynamic Response Module (DRM) had been improperly adjusted during the Unit 2 Cycle 12 refueling outage. This adjustment error was caused by an inadequate procedure.

In October 2000, procedure SO23-II-8.32, "Steam Bypass Control System Functional Test," had been modified to require individual SBCS module checks and calibration instead of the previous loop style check. This change was intended to facilitate discovery of individual module setting drift and/or malfunctions. The DRM settings for gain and time constant are interdependent and changing one will affect the other. This detail was not provided in the procedure. Additionally, the procedure did not include an effective final test to verify the quick open feature performed correctly.

Corrective Actions:

1. On July 6, 2002, the Unit 2 SBCS DRM was adjusted to its correct values (MO 02070223001).

2. On August 10, 2002, the Unit 3 SBCS DRM was adjusted to its correct values (MO 02070646000)

3. A reading assignment will be provided to appropriate engineering personnel and maintenance I & C procedure writers on the root cause for this event.

4. Procedure SO23-II-8.32 will be revised to require measuring and recording the DRM gain and a post maintenance verification test that checks the calibration of the SBCS quick open circuit.

Safety Significance:

SCE concludes that this event was of very low to no safety significance. The SBCS is not credited in the accident analysis and safety systems functioned correctly.

UFSAR Sections 15.1.1.3 and 15.10.1.1.3 evaluate a postulated event where a failure in the SBCS causes one or more of the bypass valves to fully open with the plant at full power. The UFSAR analysis shows that all of the event acceptance criteria (DNBR, offsite doses, peak linear heat rate, peak RCS pressure, and peak secondary pressure) are met.

Additional Information:

In the last two years, there have been no other occurrences of an inadequate procedure resulting in ESF actuations.